UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,330	08/29/2003	Uri Elzur	13783US02	1614

23446   7590   10/16/2007
MCANDREWS HELD & MALLOY, LTD
500 WEST MADISON STREET
SUITE 3400
CHICAGO, IL 60661

EXAMINER
HOANG, HIEU T

ART UNIT	PAPER NUMBER
2152	

MAIL DATE	DELIVERY MODE
10/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/652,330	ELZUR ET AL.
	Examiner	**Art Unit**	
	Hieu T. Hoang	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _26 September 2007_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-35_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-35_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _08/29/2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This office action is in response to the communication filed on 09/26/2007.

2.   Claims 1-35 are pending and presented for examination.

3.   The terminal disclaimer filed on 09/26/2007 has been reviewed and
accepted. The terminal disclaimer has been recorded. Therefore, the double
patenting rejection of claims 18 and 26 is withdrawn.

Response to Arguments

4.   Applicant's arguments have been fully considered but they are not
persuasive.

5.   Argument one is on page 11 of the Remarks wherein the applicant argues
that the prior art does not teach: "an integrated chip". The examiner respectfully
traverses. First, by the dictionary, an integrated chip or a chip is just an
integrated circuits or a device consisting of a number of connected circuit
elements, so a central processing unit can be read as an integrated chip.
Therefore, Philbrick's processor can be well read on the claimed integrated chip.
Second, the functions that the chip can support such as TCP/IP, iSCSI/RDMA...
are not in the independent claim, therefore rendering the argument moot.

6.   Argument two is on page 12 of the Remarks wherein the applicant argues
that the prior art does not teach: "an Ethernet connector". The examiner
respectfully traverses. First, by reciting: "comprising...an Ethernet connector," the
claim does not exclude the possibility of using more than one Ethernet connector.
Philbrick in fig. 16 and [0066], [0067] and [0106] shows four network connectors

for the purpose of supporting <u>different conduits (such as twisted pair, coaxial cable or optical fiber), not for supporting each traffic on a different connector</u>. Furthermore, there is no need for Boucher's network interface card to have four network connectors for it to function. If one conduit is used alone, the connector is fully capable of communicating a plurality of network traffics as indicated in the third limitation of claim 1.

7.   Argument three is on page 15 and 16 of the Remarks wherein the applicant argues that the prior art does not teach: "using a single fabric for a plurality of different types of traffic" and "handling the plurality of different types of traffic via a single layer 2 connector of the server". The examiner respectfully traverses. Refer to fig. 6 of Philbrick, there is a single path between a MAC controller 424 to a processor 408 on the INIC (intelligent network interface card 400). Clearly, processor 408 is on the INIC, not the server nor host 20; and the examiner did not infer that processor 408 is on the host. The claim recites: "using a single fabric," it neither states where from nor where to the fabric begins and ends. The claim preamble recites: "communicating with a server," however this detail is given no weight for it's just in the preamble of the claim. So any fabric supporting multiple traffics between any two points can be well read on this limitation, needless to say whether or not it is from the MAC controller to the INIC processor. The argument on PHY 422 and MAC 424 correspond to different LAN or SAN is moot. Once again, like in argument two above, Philbrick in fig. 16 and [0066], [0067] and [0106] shows four network connectors for the purpose of supporting <u>different conduits (such as twisted pair, coaxial cable or optical fiber),</u>

not for supporting each traffic on a different connector. Furthermore, there is no

need for Boucher's network interface card to have four network connectors for it

to function. If one conduit is used alone, the connector is fully capable of

communicating a plurality of network traffics as indicated in limitation (b) of claim

26. For example, a single SAN connector can support iSCSI (first traffic) over

TCP/IP (second traffic) (Philbrick, [0065] lines 15-17)

8.   Argument four is on page 17 of the Remarks wherein the applicant argues

that the prior art does not teach: "the single fabric comprises an Ethernet based

fabric". This limitation is disclosed by Philbrick ([0065], lines 9-11, Ethernet based

fabric). And as mentioned above, there is no need for Boucher's network

interface card to have four network connectors for it to function. If one conduit is

used alone, the connector is fully capable of communicating a plurality of network

traffics as indicated in limitation (b) of claim 26. For example, a single SAN

connector can support iSCSI (first traffic) over TCP/IP (second traffic) (Philbrick,

[0065] lines 15-17)

9.   Argument five is on page 20 wherein the applicant argues that the prior art

AAPA-Philbrick does not teach: "at least one of the first server, the second

server, and the third server handles a plurality of different traffic types over a

single fabric". The examiner respectfully traverses. It is maintained as above that

Philbrick dose teach "a single fabric for a plurality of different types of traffic"

applied to a NIC connected to a host or a server. Therefore, it would have been

obvious for one skilled in the art at the time of the invention to see that the

combination AAPA-Philbrick does teach "at least one of the first server, the

second server, and the third server handles a plurality of different traffic types
over a single fabric."

10.   Argument six is on pages 22-23 wherein the applicant argues that the
prior art Philbrick-Microsoft does not teach: "the same single fabric is used to
access the cluster, the storage system and the network." The examiner
respectfully traverses. It is re-emphasized that no details description on the fabric
is recited in the claims. Therefore, given its broadest interpretation, a fabric is a
connection or a path between any two points of a system containing a NIC
connecting to a host. Referring to [0033] of the specification, the cluster traffic is
RDMA over TCP/IP. Microsoft teaches RDMA over TCP/IP in fig. 2, page 5 lines
7-8. The applicant seems to argue that RDMA traffic and TCP/IP traffic are
separated in two paths by Microsoft. However, referring to fig. 15 of the
specification, RDMA and TCP/IP are also separated in two paths and then
merged by a Windows socket switch. Therefore, it would have been obvious for
one skilled in the art at the time of the invention to combine the teachings of
Philbrick and Microsoft to further provide more functions such as RDMA support
on an iSCSI-enabled NIC of Philbrick.

Claim Rejections - 35 USC § 102

11.   The following is a quotation of the appropriate paragraphs of 35
U.S.C. 102 that form the basis for the rejections under this section made in this
Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12.   Claims 18, 20, 22-29, 31 and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Philbrick et al. (US 2001/0037406, hereafter Philbrick).

13.   For claim 18, Philbrick discloses a server, comprising:

- an integrated chip (fig. 6, processor 408);

- an Ethernet connector coupled to the integrated chip ([0066] lines 12-15, Ethernet connector 424 which is a MAC controller), wherein the Ethernet connector and the integrated chip can handle a plurality of different types of traffic ([0065] lines 15-21, iSCSI and TCP/IP).

14.   For claim 20, Philbrick further discloses the server has a single Internet protocol (IP) address ([0053] IP address).

15.   For claim 22, Philbrick further discloses the Ethernet connector handles the plurality of different types of traffic over a single fabric (fig. 6, single path from Ethernet connector 424 to processor 408).

16.   For claim 23, Philbrick further discloses the Ethernet connector comprises a single Ethernet connector (fig. 6, single Ethernet connector 424).

17.   For claim 24, Philbrick further discloses the integrated chip comprises a

single integrated chip (fig. 6, single chip 408).

18.   For claim 25, Philbrick further discloses the plurality of different types of

traffic comprises at least two of network traffic, storage traffic, interprocess

communication (IPC) traffic and cluster traffic ([0065] lines 15-21, network traffic

TCP/IP and storage traffic iSCSI).

19.   For claim 26, Philbrick discloses a method for communicating with a

server, comprising:

(a) using a single fabric for a plurality of different types of traffic (fig. 6, single

path from a Ethernet connector 424 to processor 408); and

(b) handling the plurality of different types of traffic via a single layer 2 (L2)

connector of the server ([0065] lines 15-21, network traffic TCP/IP and storage

traffic iSCSI).

20.   For claim 27, Philbrick further discloses the single fabric comprises an

Ethernet-based fabric ([0065], Ethernet-SCSI fabric).

21.   For claim 28, Philbrick further discloses the single fabric comprises a

transport protocol/network protocol-based fabric ([0065] lines 15-21, network

traffic TCP/IP).

22.   For claim 29, Philbrick further discloses (b) comprises accessing a storage

device via the single L2 connector ([0065] lines 15-21, storage traffic iSCSI).

23.   For claim 31, Philbrick further discloses (b) comprises accessing a

network via the single L2 connector ([0065] lines 15-21, network traffic TCP/IP).

24.   For claim 32, Philbrick further discloses (b) comprises handling the

plurality of different types of traffic via an Ethernet connector of the server ([0065]

lines 15-21, network traffic TCP/IP and storage traffic iSCSI).

Claim Rejections - 35 USC § 103

25.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

26.   Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Applicant's Admitted Prior Art (background of the invention and fig. 1-5,

hereafter AAPA) and further in view of Philbrick.

27.   For claim 1, AAPA discloses a data center, comprising:

- a first tier comprising a first server; a second tier coupled to the first tier,

  the second tier comprising a second server; and a third tier coupled to the

  second tier, the third tier comprising a third server (fig. 1, servers A, B, and

  C connected in three tiers)

  AAPA does not disclose:

- wherein at least one of the first server, the second server and the third

  server handles a plurality of different traffic types over a single fabric.

  However, Philbrick discloses:

- wherein at least one of the first server, the second server and the third

  server handles a plurality of different traffic types over a single fabric (fig.

  6, a server handles iSCSI and TCP/IP over a single fabric connecting the

  Ethernet connector 424 and processor 408).

  Therefore, it would have been obvious for one skilled in the art at the time

of the invention to combine the teachings of AAPA and Philbrick to apply multiple

traffic support over one fabric of Philbrick to the three-tier servers of AAPA to

conserve resources (Philbrick, [0065], lines 1-4, storage traffic and network traffic

without the need of a specialized connector).

28.   For claim 2, AAPA-Philbrick discloses the invention as in claim 1. AAPA-

Philbrick further discloses the first server handles at least network traffic and

direct attached storage (DAS) traffic over the single fabric (Philbrick, [0065] lines 15-21, DAS traffic or SCSI).

29.   For claim 3, AAPA-Philbrick discloses the invention as in claim 1. AAPA-Philbrick further discloses the first server uses a single controller for handling at least network traffic and DAS traffic (Philbrick, fig. 6 single processor on a single intelligent network interface controller INIC).

30.   For claim 4, AAPA-Philbrick discloses the invention as in claim 1. AAPA-Philbrick further discloses the second server handles at least two of network traffic, storage traffic and cluster traffic over the single fabric (Philbrick, [0065] lines 15-21, network traffic TCP/IP and storage traffic iSCSI).

31.   For claim 5, AAPA-Philbrick discloses the invention as in claim 1. AAPA-Philbrick further discloses the second server uses a single controller for handling at least two of network traffic, storage traffic and cluster traffic (Philbrick, fig. 6, single processor on a single intelligent network interface controller INIC).

32.   For claim 6, AAPA-Philbrick discloses the invention as in claim 5. AAPA-Philbrick further discloses storage traffic comprises traffic from a redundant-array-of-independent-disks (RAID) configuration or traffic from storage devices accessible via a network (Philbrick, [0011], RAID).

33.   For claim 7, AAPA-Philbrick discloses the invention as in claim 1. AAPA-

Philbrick further discloses the second tier comprises an application tier (AAPA,

[05] line 8).

34.   For claim 8, AAPA-Philbrick discloses the invention as in claim 1. AAPA-

Philbrick further discloses the third server handles at least two of network traffic,

storage traffic and cluster traffic over the single fabric (Philbrick, [0065] lines 15-

21, network traffic TCP/IP and storage traffic iSCSI).

35.   For claim 9, AAPA-Philbrick discloses the invention as in claim 1. AAPA-

Philbrick further discloses the third server uses a single controller for handling at

least two of network traffic, storage traffic and cluster traffic (Philbrick, fig. 6,

single processor on a single intelligent network interface controller INIC).

36.   For claim 10, AAPA-Philbrick discloses the invention as in claim 1. AAPA-

Philbrick further discloses the single fabric is based upon a layer 2 (L2) protocol

(Philbrick, fig. 6, single fabric has a MAC controller).

37.   For claim 11, AAPA-Philbrick discloses the invention as in claim 1. AAPA-

Philbrick further discloses the single fabric is based upon an Ethernet (Philbrick,

fig. 12, 13, Ethernet stack).

38.   For claim 12, AAPA-Philbrick discloses the invention as in claim 1. AAPA-

Philbrick further discloses the single fabric is based upon a transport/network

protocol (Philbrick, fig. 12, 13, TCP stack).

39.   For claim 13, AAPA-Philbrick discloses the invention as in claim 12.

AAPA-Philbrick further discloses the transport/network protocol comprises a

transmission control protocol/Internet protocol (TCP/IP) (Philbrick, fig. 13,

TCP/IP).

40.   For claim 14, AAPA-Philbrick discloses the invention as in claim 1. AAPA-

Philbrick further discloses at least one of the first server, the second server and

the third server uses an Internet small computer system interface (iSCSI)

protocol in communicating with storage (Philbrick, [0065] line 19, iSCSI over

TCP).

41.   For claim 15, AAPA-Philbrick discloses the invention as in claim 1. AAPA-

Philbrick further discloses the iSCSI protocol runs on top of TCP/IP (Philbrick,

[0065] line 19).

42.   Claims 33-35, 30 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Philbrick as applied to claim 26 above, and further in view of

Microsoft (03/03/2001, Winsock Direct and Protocol Offload on SANs,

download.microsoft.com/download/1/6/1/161ba512-40e2-4cc9-843a-
923143f3456c/WinsockDirect-ProtocolOffload.doc).

43.   For claim 33, Philbrick discloses a method for communicating in a data
center, comprising:

(a) accessing a storage system over a single fabric ([0065] lines 15-21, network
traffic TCP/IP and storage traffic iSCSI);

(c) accessing a network over the single fabric ([0065] lines 15-21, network traffic
TCP/IP and storage traffic iSCSI).

Philbrick does not explicitly disclose (b) accessing a cluster over the single
fabric.

However, Microsoft discloses (b) accessing a cluster over the single fabric
(fig. 2, page 5 lines 7-8, RDMA support for clustering traffic, RDMA running over
TCP/IP).

Therefore, it would have been obvious for one skilled in the art at the time
of the invention to combine the teachings of Philbrick and Microsoft to further
provide more functions such as RDMA support on a iSCSI enabled NIC of
Philbrick.

44.   For claim 30, the claim is rejected for the same rationale as in claim 33.

45.   For claim 34, Philbrick-Microsoft discloses the invention as in claim 33.
Philbrick-Microsoft further discloses (a), (b) and (c) are performed over a single

Ethernet connector of a server in the data center (Philbrick, fig. 6, single Ethernet

connector 424).

46.   For claim 35, Philbrick-Microsoft discloses the invention as in claim 33.

Philbrick-Microsoft further discloses the single Ethernet connector has a single

Internet protocol (IP) address (Philbrick, [0053] IP address).

47.   Claims 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable

over AAPA-Philbrick, as applied to claims 1 and 14 above, and further in view of

Microsoft.

48.   For claim 17, AAPA-Philbrick discloses the invention as in claim 1. AAPA-

Philbrick does not disclose at least one of the first server, the second server and

the third server uses an RDMAP for interprocess communication.

        However, Microsoft discloses (b) accessing a cluster over the single fabric

(fig. 2, page 5 lines 7-8, RDMA support for clustering traffic, RDMA running over

TCP/IP).

        Therefore, it would have been obvious for one skilled in the art at the time

of the invention to combine the teachings of Philbrick and Microsoft to further

provide more functions such as RDMA support on a iSCSI enabled NIC of

Philbrick.

49.   For claim 16, the claim is rejected for the same rationale as in claim 17.

50. Claims 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Philbrick, in view of what has been known in the art.

51. For claim 19, Philbrick discloses the invention as in claim 18. Philbrick does not explicitly disclose the server comprises a blade server, and wherein the integrated chip is part of a blade mounted in the blade server.

However, it is well known that the server comprises a blade server, and wherein the integrated chip is part of a blade mounted in the blade server.

Therefore, it would have been obvious for one skilled in the art at the time of the invention to apply Philbrick to a blade server system to make use of advantages of a blade server system such as high space density.

52. For claim 21, the claim is rejected for the same rationale as in claim 19.

Conclusion

53. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory

action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.
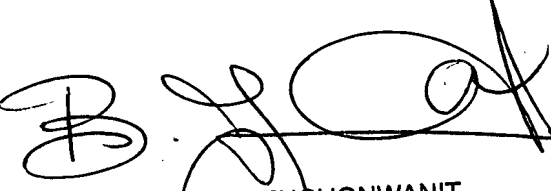
54.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hieu T. Hoang whose telephone number is 571-270-1253. The examiner can normally be reached on Monday-Thursday, 8 a.m.-5 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HH

BUNJOB JAROENCHONWANIT
SUPERVISORY PATENT EXAMINER   10/12/7